



2015-16

Missouri Deer Season Summary & Population Status Report



Missouri Department of Conservation

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2015 – 2016 Overview

The 2015-2016 harvest of 274,447 deer was a 7% increase from 2014-15 and a slight decrease (3%) from the 10-year average. The 2015-2016 seasons were characterized by harvest increases of 8% or higher across much of southern Missouri compared to the previous hunting season. Modest harvest increases of 5% were also recorded in central Missouri. Alternatively, deer harvest across much of northern Missouri was relatively static when compared to the previous year.

Deer populations have decreased in many central, northern, and western Missouri counties in recent years due to liberal antlerless permit availability, severe hemorrhagic disease outbreaks, and changes in habitat availability. Although deer population reduction was once a goal for much of northern Missouri, deer numbers have now dipped well below socially acceptable levels in this region. In response to this population trend, we reduced the number of antlerless permits available in each county to 1 or 2 throughout much of the state beginning in 2014. These changes resulted in a decrease in does harvested during 2014-2015 and 2015-2016. Although doe harvest in 2015 was 8% higher than 2014, it was 4% lower than the 5-year average and 10% lower than the 10-year average. Furthermore, 2014 was the first time in more than 10 years that buck harvest exceeded doe harvest, and that trend continued for 2015, when 2,284 more bucks were harvested than does. Although deer populations are likely to fluctuate due to many other factors, including disease outbreaks and habitat conditions, this reduction in doe harvest may help to stabilize deer numbers where desired.

Deer numbers continue to be stable to slowly increasing in much of southern Missouri. However, the population remains well below social carrying capacity and thus we will continue to institute conservative harvest regulations. As the population continues to grow, we will evaluate liberalized regulations to maintain the population within acceptable levels and provide additional recreational opportunities.

The goal of MDC's Deer Program is to maintain balanced deer populations at desired levels while providing deer-related recreational opportunities for Missourians. We define "desired levels" as the point at which deer populations are both biologically sustainable and socially acceptable to hunters, agricultural producers, and other interested stakeholders. The Deer Program develops regulation recommendations annually based on harvest data, hunter and agricultural producer surveys, MDC staff surveys, public comments, population simulations, and the Chronic Wasting Disease (CWD) management plan.

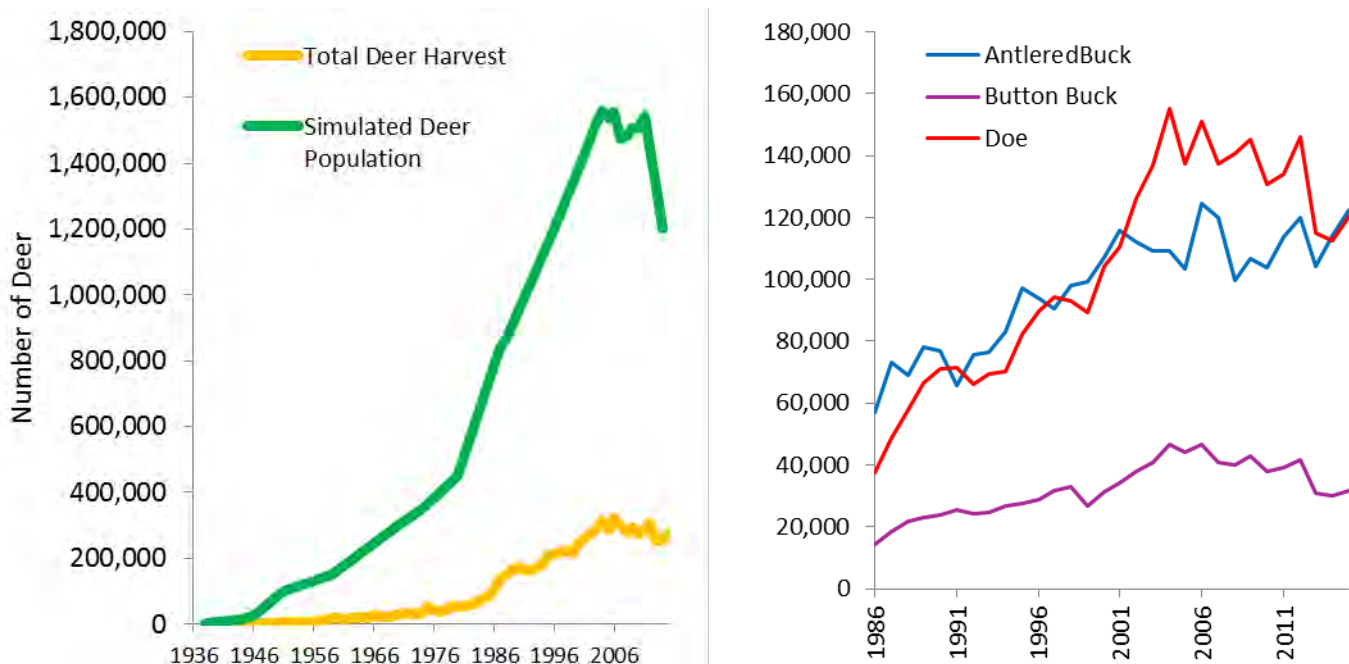


Figure 1. Statewide estimated deer population and total deer harvest from 1938 to 2015 (left). Number of antlered bucks and does in the statewide deer harvest from 1986 to 2015 (right).

Deer Season General Information: 2015-2016

Season Dates:

Archery Season: September 15 – January 15, closed during the November portion of the firearms deer season

Firearms Season:

Urban Portion: October 9 – 12

Youth Portion: October 31 – November 1; January 2 – 3

November Portion: November 14 – 24

Antlerless Portion: November 25 – December 6

Alternative Methods Portion: December 19 – 29

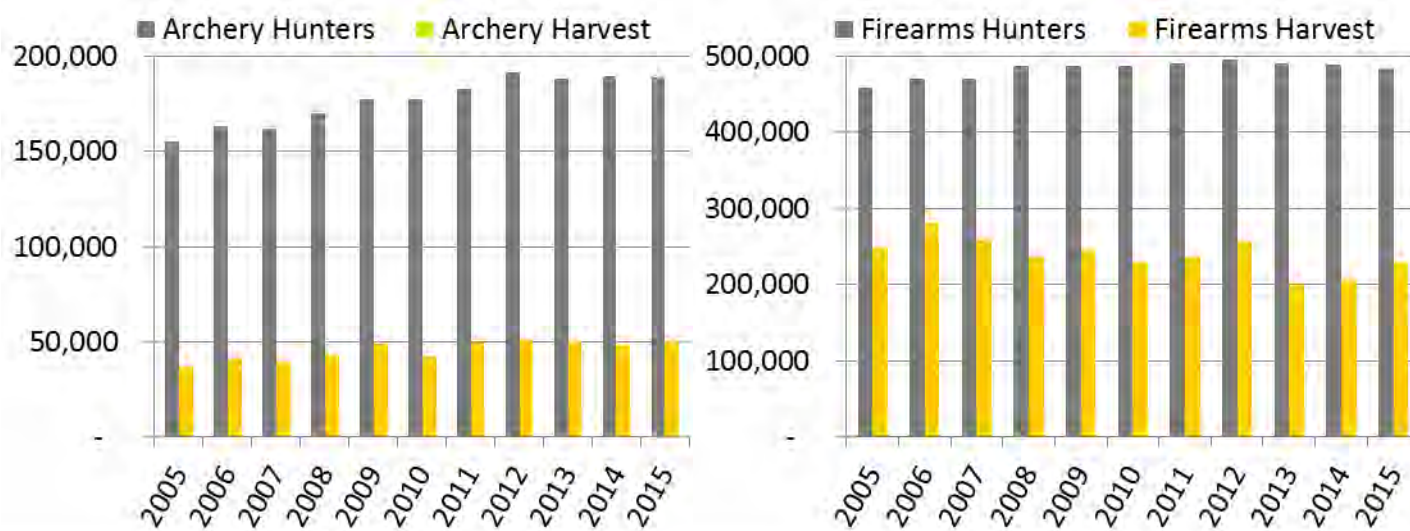


Figure 2. Trends in the number of individuals holding an archery and firearms deer hunting permit and harvest.

Archery Season Summary

The 2015 archery season was a 3% increase from the 2014 season and ranked as the fourth largest archery harvest to date with 49,759 deer harvested. Compared to 2014, the 2015 season antlered buck harvest was about the same, while button buck and doe harvest increased by 5 and 6%, respectively (Table 1). The number of archery permits issued in 2015 was about the same as during the 2014 season (Tables 2 and 3). Archery season harvest accounted for 18% of the overall harvest for 2015-2016. This rate was about the same as 2014, although in recent years we have seen this proportion slowly increasing.

Firearms Season Summary

Resident firearms hunters possessed 860,581 permits - almost no change from 2014 and a 3.5% decrease from 2013. The decrease in permits over the past few years is a result of the reduced antlerless permit allocation in many counties in 2014. The number of antlerless permits available in each county were reduced in an effort to allow deer populations to stabilize in some areas. However, the overall decreasing trend has seemed to plateau and the total number of antlerless permits purchased was slightly higher this year compared to last year. The overall slight decrease in all permits was due to decreases in youth permits and any-deer permits.

Deer harvest during the 2015-16 firearms season totaled 223,339, a 8% increase from 2014 and a 6% decrease from the 10-year average (Table 1). Compared to 2014, button buck and doe harvest increased 7% and antlered buck harvest increased 9%. The firearms hunter composition has remained relatively the same as last year with 94% of the harvest attributed to resident hunters and 6% to non-resident hunters (Table 2). Because of the diversity and size of the state, we view harvest and population trends on the regional and county level to better understand the local populations. Pages 9-13 contain the regional population information.

Harvest during the 2015 urban zones portion decreased by 35% from 2014. During the 2015 urban zones portion, 392 deer were harvested compared to 599 deer harvested during the 2014 urban zones portion. This drop in harvest is most likely from dissolving the Boone and Cole County urban zones the previous year. Due to the continued low harvest and low hunter participation we have eliminated the urban zones portion for 2016-2017 deer firearms season. These areas can still be hunted during the various other season portions. We have also eliminated the St. Louis urban zone due the incorporation of those areas into a CWD management zone. The Kansas City urban zone will still exist and those boundary designations will facilitate additional antlerless permit availability in that zone, but the firearms urban portion has been eliminated.

The 2015 early youth season harvest decreased 26% from 2014 with 13,583 deer harvested, however the late youth season harvest increased by 2,353 deer, or 110%. The totals from both hunts combined include 8,706 antlered bucks, 1,890 button bucks, 5,340 does, and 15,935 total deer (Table 1). The overall combined total was 18% lower than 2014. The sharp rise in the late youth season is likely due to youth who were unable to fill their tag in the early youth portion choosing to partake in the late youth portion. In an effort to increase participation, hunter recruitment, and harvest, beginning in 2016-2017 the late youth portion will be moved to the first weekend after Thanksgiving and will be extended by an extra day.

The 2015 antlerless portion harvest totaled 9,542 deer, a 5% increase from 2014. Increase in antlerless harvest may indicate stabilization of deer populations in central, northern, and western Missouri (refer to pages 9-13 for information on regional trends). Favorable weather may have also increased success by allowing satisfactory hunting conditions for hunters. Given our management goal across much of northern Missouri is to continue to stabilize the deer herd, the current length of the antlerless portion of the firearms season is no longer desirable. Thus, the antlerless portion has been reduced to 3 days and moved to the first weekend in December for the 2016-2017 deer season.

The 2015 harvest during the alternative methods portion totaled 10,808 deer, which was almost no change from the 2014 harvest. The antlered buck harvest during this portion was a 2% increase from 2014, totaling 2,914 deer harvested. Button buck harvest increased by 3% to 1,555 while doe harvest decreased 6% to 6,339 deer harvested. These totals follow the trend set throughout the season of increased antlered buck harvest.

Managed Deer Hunt Summary

Managed deer hunt participants harvested 1,468 deer in 2015. Managed deer hunts are a tool used by land managers and cooperators to regulate deer populations. Therefore, the totals we receive from these hunts are an annual reflection of the quotas and number of hunts used throughout the year.

2015-16 Deer Harvest Composition By Season & Portion

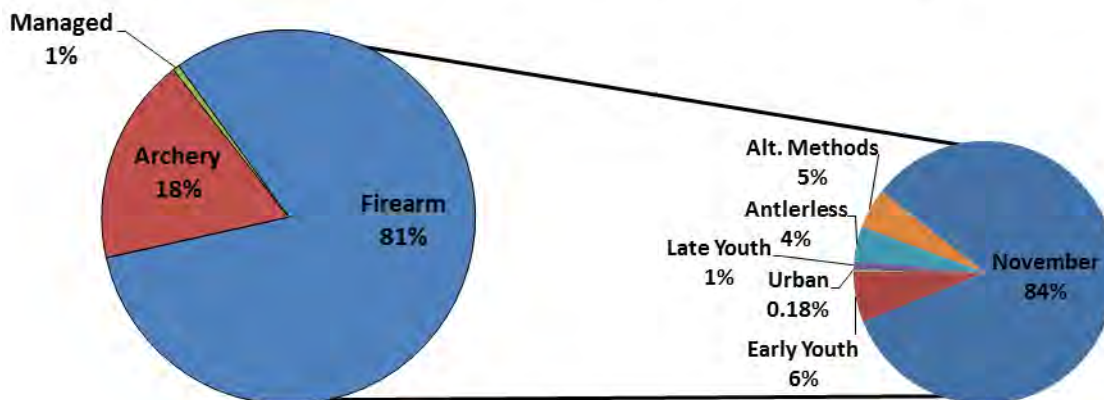


Figure 3. 2015-16 composition of total deer harvest by seasons and portions of the firearms season.

Table 1. Deer Season Harvest Comparison: 2014 & 2015

| Season/Portion | Antlered Deer | | | Button Bucks | | | Does | | | Total | | |
|-------------------|---------------|---------|---------|--------------|--------|---------|---------|---------|---------|---------|---------|---------|
| | 2014 | 2015 | % Diff. | 2014 | 2015 | % Diff. | 2014 | 2015 | % Diff. | 2014 | 2015 | % Diff. |
| Archery | 20,395 | 20,169 | -1 | 5,156 | 5,419 | 5 | 22,898 | 24,171 | 6 | 48,449 | 49,759 | 3 |
| Urban | 3 | 1 | -67 | 99 | 66 | -33 | 497 | 325 | -35 | 599 | 392 | -35 |
| Early Youth | 11,621 | 8,042 | -31 | 1,735 | 1,514 | -13 | 4,938 | 4,027 | -18 | 18,294 | 13,583 | -26 |
| November | 78,556 | 90,094 | 15 | 19,300 | 20,911 | 8 | 68,527 | 75,537 | 10 | 166,383 | 186,542 | 12 |
| Alt methods | 2,851 | 2,914 | 2 | 1,503 | 1,555 | 3 | 6,713 | 6,339 | -6 | 11,067 | 10,808 | 0 |
| Antlerless - Only | 124 | 146 | 18 | 1,642 | 1,723 | 5 | 7,354 | 7,673 | 4 | 9,120 | 9,542 | 5 |
| Managed Hunts | 427 | 424 | -1 | 275 | 224 | -19 | 962 | 820 | -15 | 1,664 | 1,468 | -12 |
| Late Youth | 239 | 664 | 178 | 179 | 376 | 110 | 705 | 1,313 | 86 | 1,123 | 2,353 | 110 |
| CWD | 34 | 70 | 106 | 6 | 14 | 133 | 14 | 35 | 150 | 54 | 119 | 120 |
| Total Firearms | 93,428 | 101,931 | 9 | 24,464 | 26,159 | 7 | 88,748 | 95,249 | 7 | 206,640 | 223,339 | 8 |
| Total | 114,250 | 122,524 | 7 | 29,895 | 31,802 | 6 | 112,608 | 120,240 | 7 | 256,753 | 274,566 | 7 |

Table 2. Permit Issued and Harvest by Permit Type

| Permit Type | Number of Permits | | | Number of Deer Harvested | | |
|-------------------------------|-------------------|---------|---------|--------------------------|---------|---------|
| | 2014 | 2015 | % Diff. | 2014 | 2015 | % Diff. |
| Permittee Archery | 109,316 | 109,498 | 0 | 22,651 | 23,376 | 3 |
| Landowner Archery | 86,096 | 85,327 | -1 | 6,523 | 6,660 | 2 |
| Youth Archery | 6,695 | 6,148 | -8 | 868 | 877 | 1 |
| Permittee Archery Antlerless | 49,292 | 48,641 | -1 | 13,005 | 13,494 | 4 |
| Landowner Archery Antlerless | 143,347 | 142,400 | -1 | 5,142 | 5,383 | 5 |
| Youth Archery Antlerless | 2,044 | 1,821 | -11 | 353 | 379 | 7 |
| Permittee Firearms Any-Deer | 294,090 | 294,465 | 0 | 69,327 | 81,237 | 17 |
| Landowner Firearms Any-Deer | 180,525 | 178,201 | -1 | 36,083 | 40,463 | 12 |
| Youth Firearms Any-Deer | 56,205 | 54,282 | -3 | 18,893 | 18,703 | -1 |
| Permittee Firearms Antlerless | 185,860 | 186,830 | 1 | 52,601 | 55,511 | 6 |
| Landowner Firearms Antlerless | 154,683 | 154,835 | 0 | 24,267 | 25,937 | 7 |
| Youth Firearms Antlerless | 22,092 | 21,336 | -3 | 5,965 | 6,394 | 7 |
| | | | | | | |
| Resident Firearms | 865,230 | 860,581 | -1 | 195,934 | 216,610 | 11 |
| Nonresident Firearms | 28,225 | 29,368 | 4 | 11,202 | 11,635 | 4 |
| Resident Archery | 385,969 | 381,917 | -1 | 44,829 | 46,367 | 3 |
| Nonresident Archery | 10,821 | 11,918 | 10 | 3,713 | 3,802 | 2 |
| | | | | | | |
| Permittee Archery & Firearms | 725,594 | 723,021 | 0 | 183,663 | 199,971 | 9 |
| Landowner Archery & Firearms | 564,651 | 560,763 | -1 | 72,015 | 78,443 | 9 |

* CWD Management Seals are part of the MDC's management plan to limit the spread of CWD. CWD Seals were distributed to landowners who own 5 acres or more in the CWD Core Areas (see page 22), which permit the harvest of one deer of either sex on the specific property for which it was issued.

** This permit type does not include youth or landowner permits. Therefore, this is the permit commonly purchased by adults hunting on property other than their own.

¹ These totals contain CWD seals and will not reflect the same numbers as Table 4

Table 3. Deer Hunter and Harvest Facts

| | Archery | Firearms | Archery & Firearms Combined |
|--|---------|----------|-----------------------------|
| Resident permits ¹ | 106,836 | 331,321 | 347,124 ³ |
| Non-resident permits ¹ | 10,086 | 20,190 | 27,481 ³ |
| Landowner permits ¹ | 85,742 | 179,522 | 181,659 ³ |
| Total Individuals with a permit ² | 188,485 | 484,294 | 508,645 ³ |
| Age Distribution of Hunters: | | | |
| 10 or younger | 1,569 | 22,493 | - |
| 11 to 15 | 10,249 | 46,801 | - |
| 16-40 | 82,316 | 179,578 | - |
| 41 or older | 94,763 | 236,422 | - |
| Antlerless permit sales: | | | |
| 1 | 29,027 | 166,451 | 195,478 |
| 2 | 6,676 | 18,111 | 24,787 |
| 3 | 1,373 | 1,300 | 2,673 |
| 4 or more | 838 | 475 | 1,313 |
| Number of Deer taken: | | | |
| 0 | 150,589 | 290,850 | 301,463 |
| 1 | 29,112 | 162,137 | 154,445 |
| 2 | 6,562 | 28,188 | 40,171 |
| 3 | 1,517 | 2,847 | 8,976 |
| 4 or more | 705 | 272 | 3,590 |
| Number of Antlered Deer taken: | | | |
| 0 | 168,839 | 298,432 | 385,631 ⁴ |
| 1 | 18,895 | 102,288 | 121,183 ⁴ |
| 2 | 740 | 1,025 | 1,765 ⁴ |
| 3 | 11 | 45 | 56 ⁴ |
| 4 or more | 0 | 10 | 10 ⁴ |
| Percentage taking: | | | |
| 1 or more deer | 20.1% | 39.9% | 40.7% ⁴ |
| 1 deer | 15.4% | 33.5% | 30.4% ⁴ |
| 2 deer | 3.5% | 5.8% | 7.9% ⁴ |
| 3 or more deer | 1.2% | 0.6% | 2.5% ⁴ |
| Percentage taking: | | | |
| 1 antlered buck | 10.0% | 21.1% | 23.8% ⁴ |
| 2 antlered bucks | 0.4% | 0.2% | 0.3% ⁴ |
| 3 or more antlered bucks | 0.006% | 0.011% | 0.013% ⁴ |
| Percentage of deer taken by nonresidents | 7.60% | 5.10% | 5.50% ⁴ |
| Percentage of deer taken by landowners | 24% | 27.20% | 28.10% ⁴ |

¹ Number of any-deer permits issued² Number of individuals possessing a permit, not number of permits issued³ Number of individuals that held an archery and/or firearms permit⁴ Number of individuals that harvested the specified number when combining their archery and firearms harvest

County Harvest Statistics

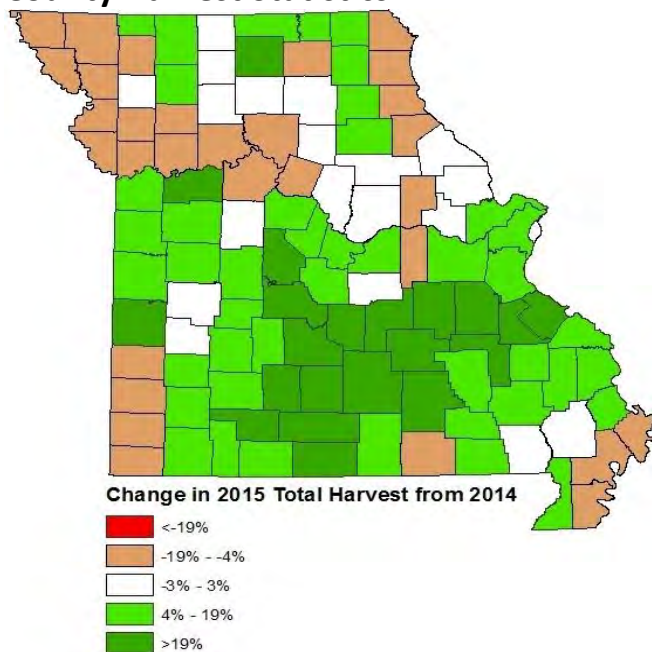


Figure 4. Percent change in county total deer harvest in 2015 from 2014.

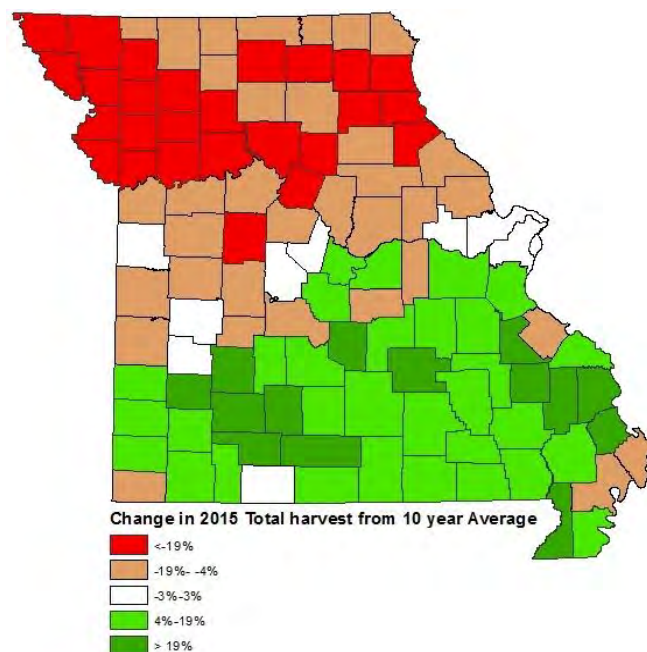


Figure 5. Percent change in county total deer harvest in 2015 compared to the 10-year average with apparent long-term harvest decreases in central, northern, and western Missouri.

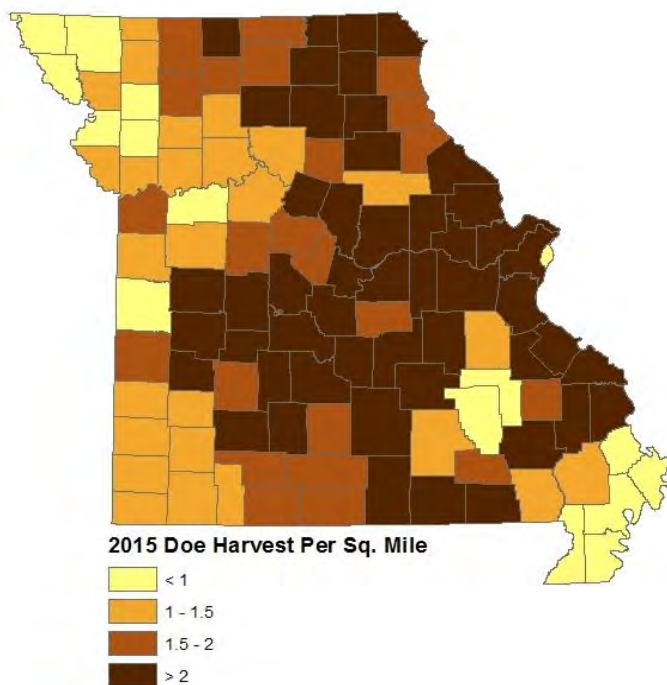


Figure 6. Doe harvest per square mile by county in 2015.

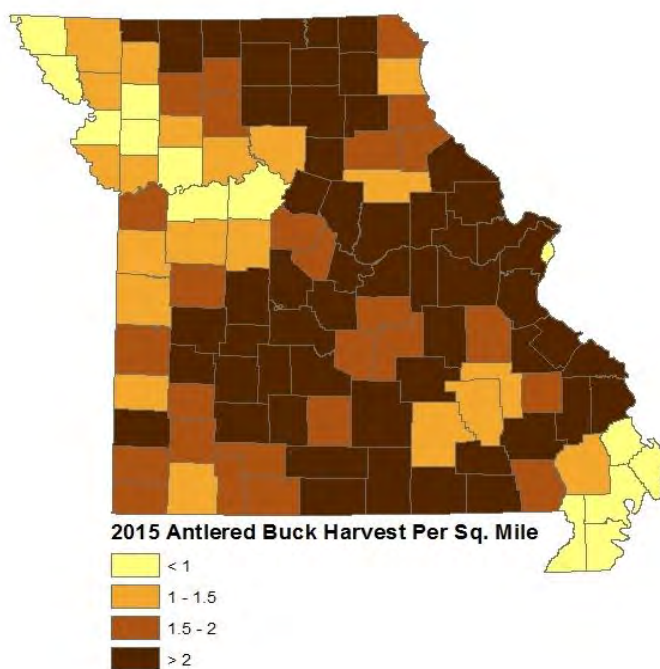


Figure 7. Antlered buck harvest per square mile by county in 2015.

Deer Hunter Data

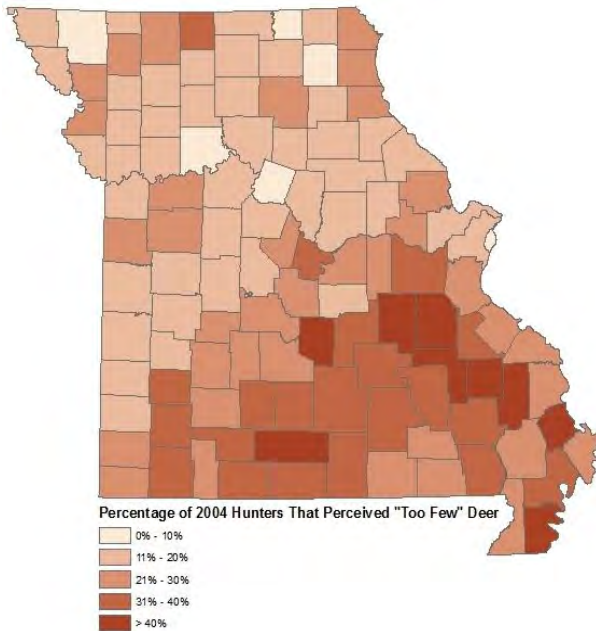


Figure 8. Percentage of hunters surveyed after the 2003-04 deer season that perceive there are too few deer.

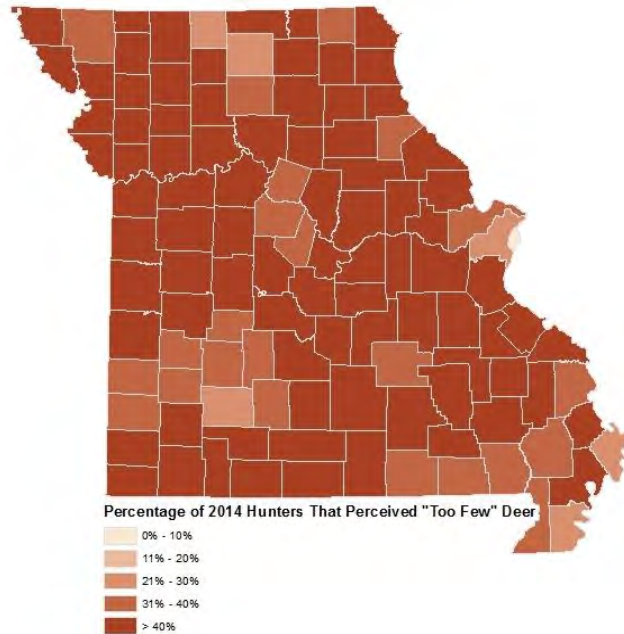


Figure 9. Percentage of hunters surveyed after the 2014-15 deer season that perceive there are too few deer.

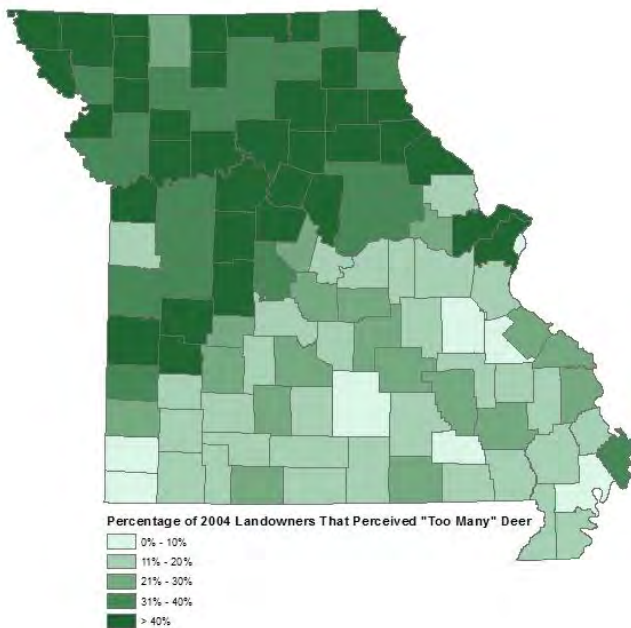


Figure 10. Percentage of agricultural producers surveyed after the 2003-04 deer season that perceive there are too many deer.

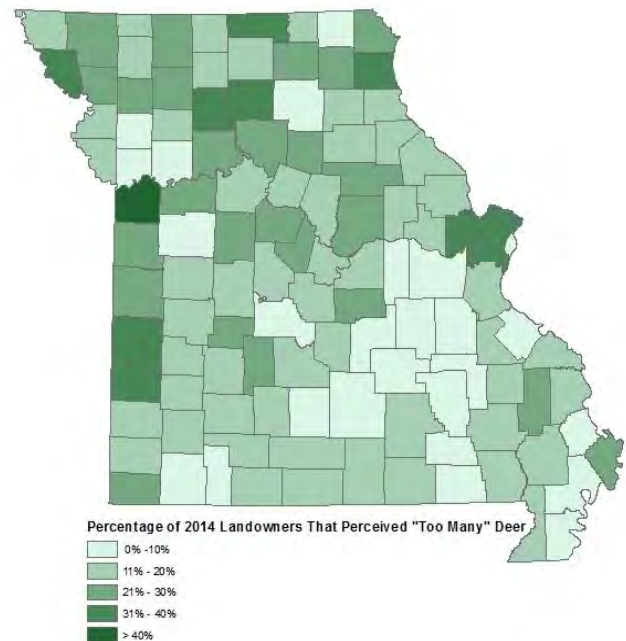
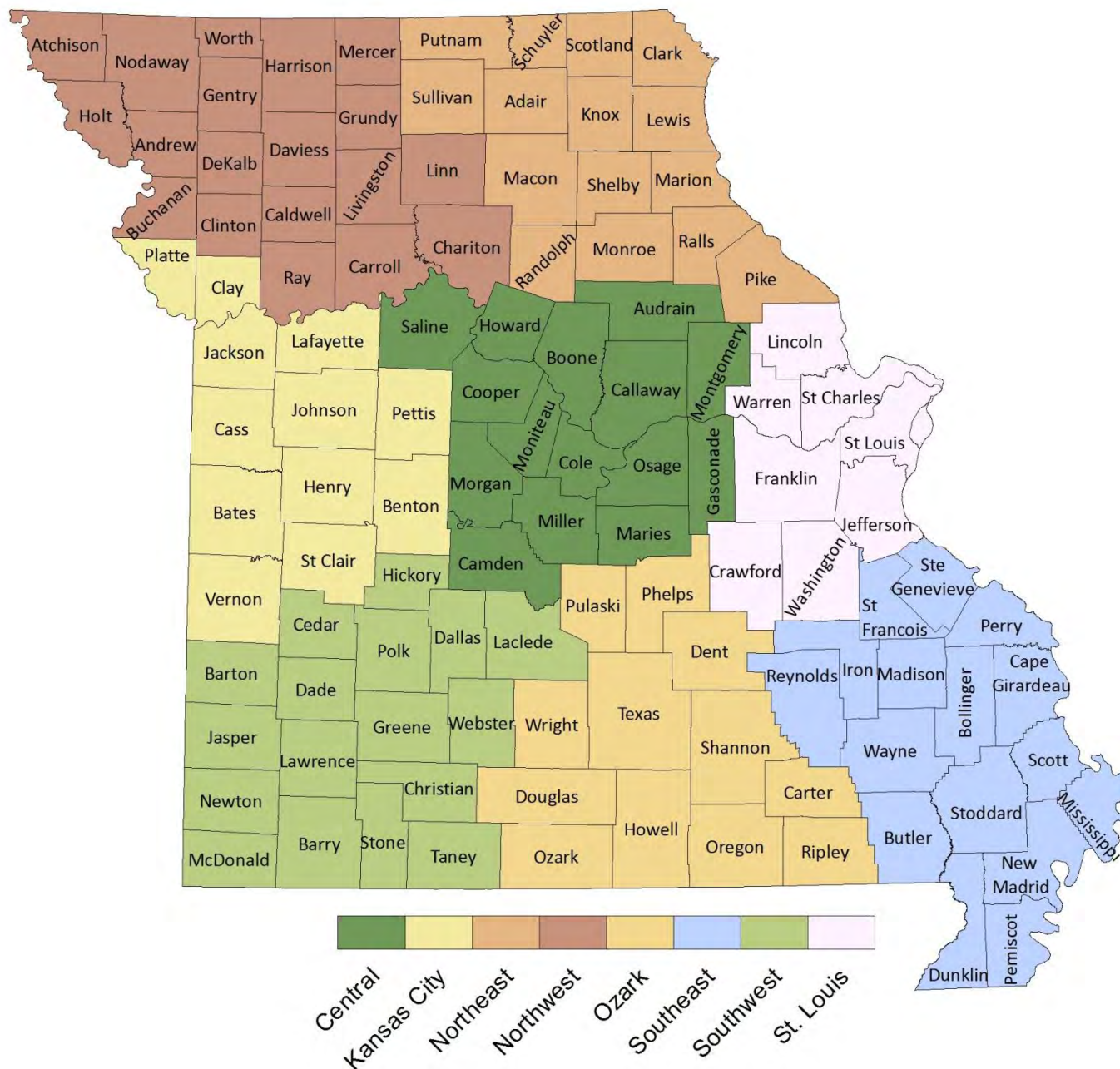


Figure 11. Percentage of agricultural producers surveyed after the 2014-15 deer season that perceive there are too many deer.

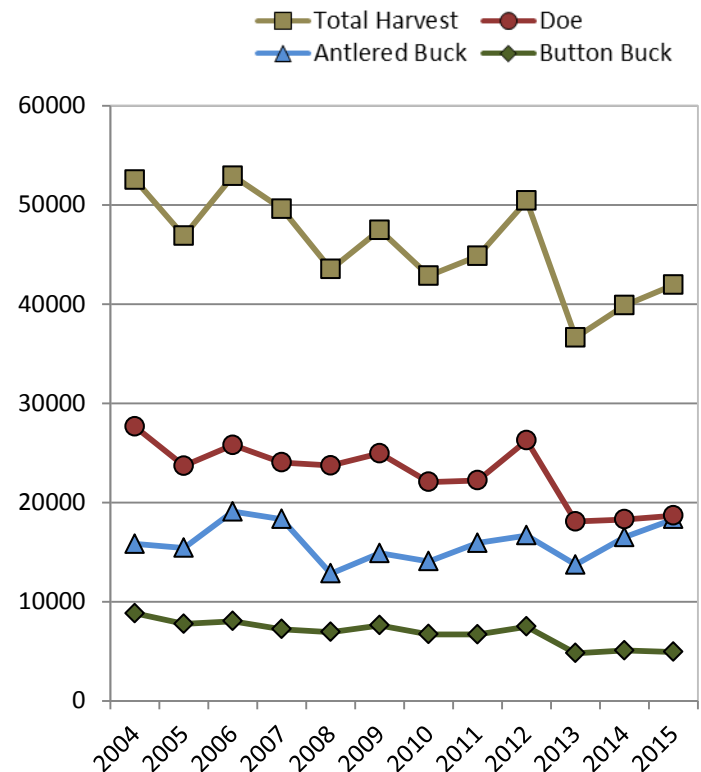
Regional Deer Populations

Statewide deer population trends are important; however, regional deer population trends are more informative to most landowners and hunters. This smaller scale makes deer population trends apparent and the factors influencing populations more easily identified. Although regional information is more indicative of population trends, it is important to acknowledge that deer populations can vary considerably within a region, and even within a county. Regional and local diversity in deer numbers is a result of differences in land cover and use, harvest regulations, hunter goals and density, and disease events, to name a few. Therefore, regional information should be considered as a starting point when evaluating deer populations within a localized area.



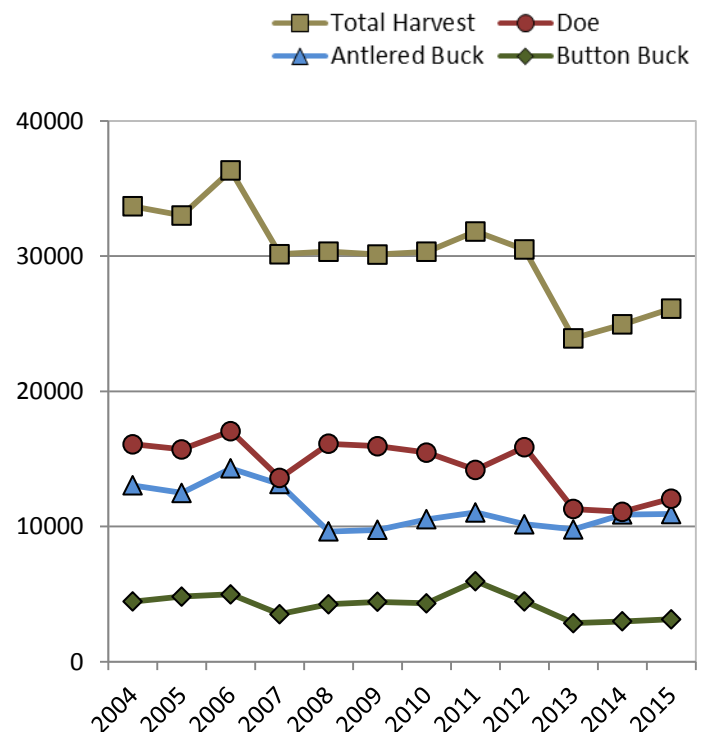
Central Region (Audrain, Boone, Callaway, Camden, Cole, Cooper, Gasconade, Howard, Maries, Miller, Moniteau, Montgomery, Morgan, Osage, Saline)

Deer densities vary within the Central Region due to diverse habitat. The Central Region deer population has been in a moderate decline since 2004. However, more recently, the population appears to be recovering from the low point that occurred in 2013. Overall, the population is still well under social and biological carrying capacity. Harvest increased by 5% in 2015 compared to 2014, but was 2% lower than the 5-year average. The top five harvest counties were Callaway, Osage, Morgan, Camden, and Gasconade counties. Although Callaway County was the highest county for total harvest, it was down 1% from 2014, whereas Morgan County harvest increased 34% and Camden County increased 20% from 2014. Much of this region is within a CWD management zone due to a CWD positive deer detected in 2014 in Cole County. With the discovery of a CWD positive deer in Franklin County in 2015, Gasconade County was added to the CWD management Zone. This means that the CWD regulations will be in effect for the 2016-2017 deer season. The antler point restriction will be removed, supplemental feed and minerals that unnaturally congregate deer and wildlife will be banned, and available antlerless permits will increase from 1 to 2.



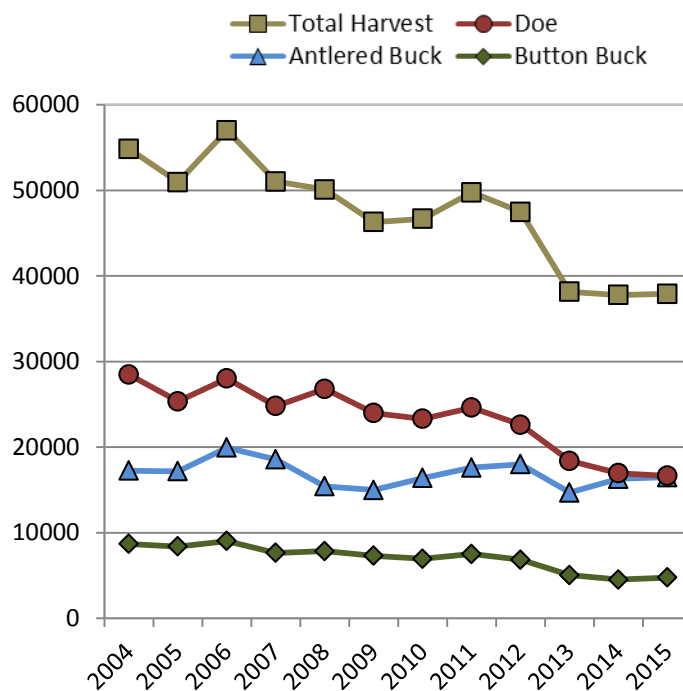
Kansas City Region (Bates, Benton, Cass, Clay, Henry, Jackson, Johnson, Lafayette, Pettis, Platte, St. Clair, Vernon)

Harvest in the Kansas City Region increased by 3% from the previous year, but was 5% lower than the 5-year average and 11% lower than the 10-year average. The deer population in this region has been declining since 2004, although more recent trends indicate the population is stabilizing. Counties with the highest harvest in the Kansas City Region during 2015-2016 included Benton, Saint Clair, Henry, Vernon, and Johnson counties. Cass County had the largest increase in harvest compared to 2014-2015 (+16%). Deer populations are still recovering from a high hunter harvest in previous years and high deer mortality due to EHD. In order to help stabilize the population, antlerless permits have been limited and the antlerless season has been shortened to 3 days. As deer populations dip below socially acceptable levels, limiting the number of antlerless deer harvested is an appropriate management action to allow deer populations to recover.



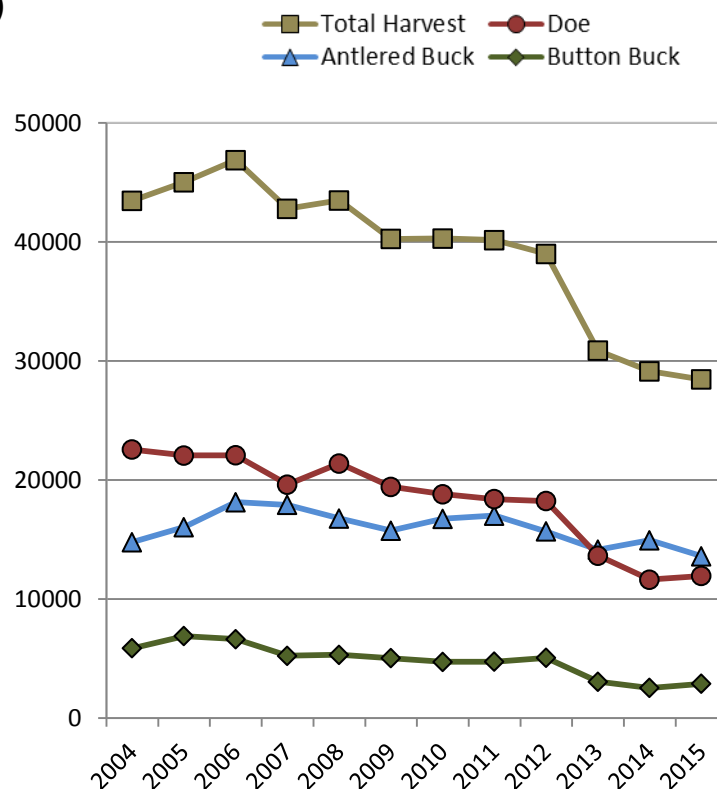
Northeast Region (Adair, Clark, Knox, Lewis, Macon, Marion, Monroe, Pike, Putnam, Ralls, Randolph, Schuyler, Scotland, Shelby, Sullivan)

The Northeast Region deer harvest has remained relatively stable over the past 3 years, decreasing only 1% from last year. However, over the past 10 years, the deer population has steadily declined from an estimated 30 deer per square mile to 18 deer per square mile – although there is much variation throughout this region. The reduction in antlerless permit availability and length of the antlerless portion should help populations begin to recover and stabilize from recent declines. It is important that hunters work to assess their own land and work with fellow landowners to adopt best management practices that fit their overall goals. There were locally severe EHD outbreaks in 2015 in this region but mortality rates were not as severe or detrimental as previous years. The top harvesting counties were Macon, Pike, Adair, Monroe, and Scotland. The highest increase in harvest occurred in Schuyler County with a 18% increase compared to the previous year. Much of this region is within a CWD management zone, but fortunately no additional counties in this region were added to the zone this year.



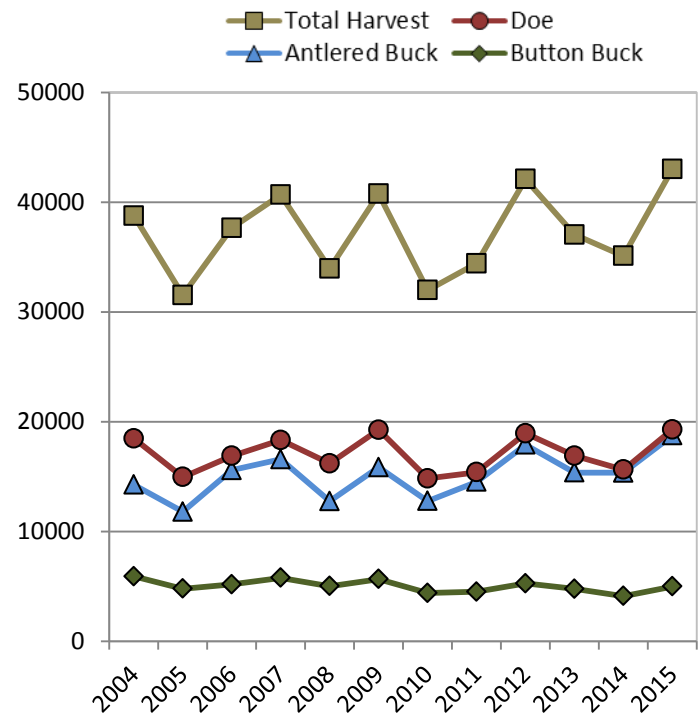
Northwest Region (Andrew, Atchison, Buchanan, Caldwell, Carroll, Chariton, Clinton, Daviess, DeKalb, Gentry, Grundy, Harrison, Holt, Linn, Livingston, Mercer, Nodaway, Ray, Worth)

The Northwest Region is still recovering from several severe EHD outbreaks in recent years and the exceptional harvest in 2012. This region continues to account for the lowest proportion of statewide harvest. The harvest from this past season was a 3% lower than 2014-2015, 18% lower than the 5-year average, and 27% lower than the 10-year average. Counties with the most significant decreases in harvest from the previous year include Clinton (-14%), Andrew (-13%) and Nodaway counties (-14%). The highest harvest increases occurred in Daviess (+13%) and Harrison (+7%) counties. The management goal in this region up until the mid-2000s was to reduce deer populations that had become overabundant. That goal was achieved although now populations are well below social and biological carrying capacities. By reducing the number of antlerless permits available, this population may begin to recover over the next few years. Unfortunately, a CWD positive deer was discovered in Linn County and the counties of Carroll and Livingston are now included in a CWD Management Zone. With the addition into the Management Zone the use of any kind of feed and mineral supplementation is now prohibited, antler point restriction has been removed, and antlerless permits have increased from 1 to 2.

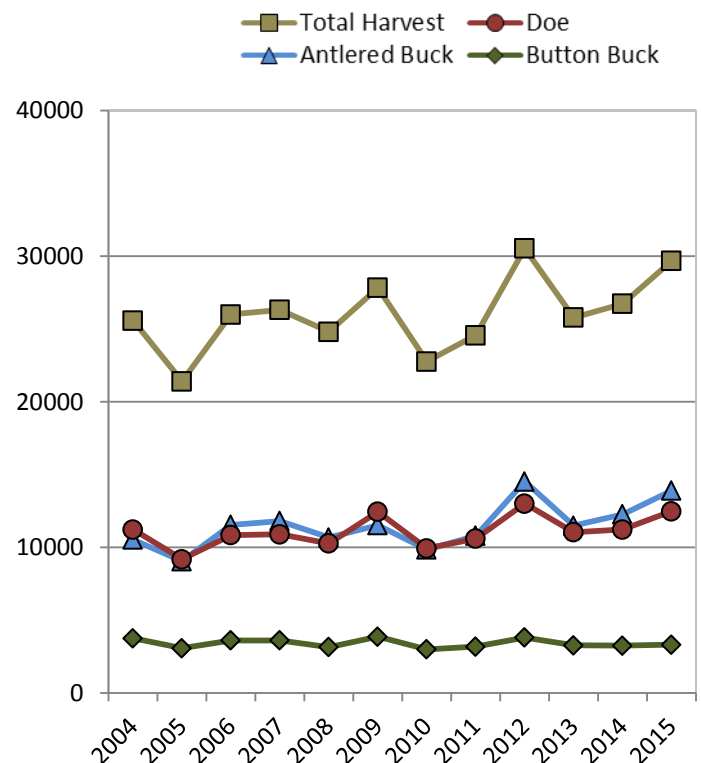


Ozark Region (Carter, Dent, Douglas, Howell, Oregon, Ozark, Phelps, Pulaski, Ripley, Shannon, Texas, Wright)

The Ozark Region's 2015-2016 deer harvest was the highest deer harvest in the state with 43,013 deer harvested. This was the first time in the past 5 years that the Ozark Region had the highest statewide harvest. The harvest increased 22% from 2014-2015, 12% from the 5-year average and 14% from the 10-year average. Acorn production can have an important effect on deer numbers in heavily forested regions such as the Ozarks. In years with lower acorn production, deer tend to travel more in search of food resulting in more deer sightings and higher harvest. The 2015-2016 acorn production was fair with an 11% decrease in the acorn Mast Production Index. Hunters reported seeing a lot of deer movement throughout the season. Populations in the Ozarks show stable growth even in light of EHD breakouts in some portions of the region. With the lowest hunter density in the state this high harvest shows that the Ozark Region deer herd is doing well and with careful management it will provide quality hunting for years to come. The top producing counties for the Ozarks were Texas, Howell, Oregon, Dent, and Douglas counties. The highest increase occurred in Dent County with a 43% increase in harvest.

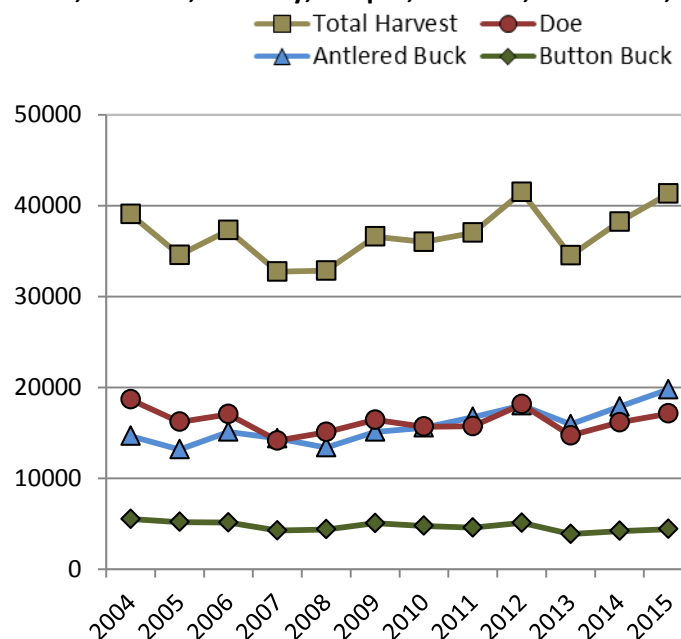
**Southeast Region (Bollinger, Butler, Cape Girardeau, Dunklin, Iron, Madison, Mississippi, New Madrid, Pemiscot, Perry, Reynolds, St. Francois, Ste. Genevieve, Scott, Stoddard, Wayne)**

The Southeast Region is the most variable region with regards to deer densities, hunter harvest, and land use and cover. Habitat within this region varies from heavily forested Ozark border areas to agricultural-dominated Mississippi floodplains. Deer harvest increased 11% in this region from last year, even with the later portion of archery season shut down due to flooding in some areas. There was a 8% increase in harvest relative to the 5-year average and a 12% increase in harvest relative to the 10-year average. These trends point to a stable, slowly growing deer population. Counties with the greatest increases in harvest over the previous year include Ste. Genevieve (35%), Iron (27%), and St. Francois (26%) counties. There is a possibility for very localized population declines due to the flooding in late December 2015. The deer herd will be closely monitored as we move into the next year. In some areas of the Southeast Region, localized problems of deer damage to small soybean fields surrounded by forest has been a historically complicated issue, read on Page 23 about how MDC is conducting research to better address this issue.



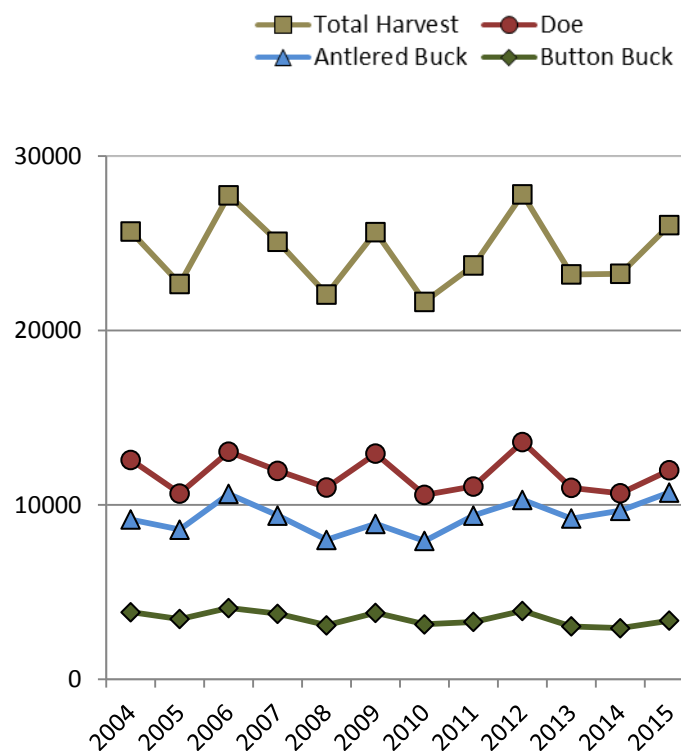
Southwest Region (Barry, Barton, Cedar, Christian, Dade, Dallas, Greene, Hickory, Jasper, Laclede, Lawrence, McDonald, Newton, Polk, Stone, Taney, Webster)

The Southwest Region had a record year in total harvest with 41,311 deer harvested. It was the third highest region in the state and the highest number of deer harvested in this region over the past ten years. The overall population shows a growing but stable deer herd with some pockets still below social carrying capacity. Large groups of deer are seen more frequently in open fields and throughout the countryside. This year's harvest increased 11% from last year and 8 and 12% from the 5-year and 10-year averages, respectively. Laclede, Dallas, Polk, Webster and Hickory counties reported the highest firearms harvest. Laclede County bore the highest growth in harvest with a 22% increase from 2014. All but two counties saw an increase in harvest proving that 2015-16 was a great year for the Southwest region. As this population continues to grow regulations will be adapted to manage this region's deer population in order to keep the herd at levels within biological and social carrying capacities.



St. Louis Region (Crawford, Franklin, Jefferson, Lincoln, St. Charles, St. Louis, Warren, Washington)

Deer harvest in the St. Louis Region increased 10% compared to the previous year. Deer harvest totals were 5% higher than the 5-year average and 6% higher than the 10-year average. The deer herd in this region seems to be following a stable trend and within social carrying capacity – although localized areas of higher deer densities do exist in urban areas. Urban areas often pose complications for effective deer management as a result of limited access and restrictions on hunting methods due to local ordinances, safety, and contrasting public perspectives. Archery harvest is a critical tool in urban deer management, and thus the regulation change to allow crossbows as a method of archery harvest should increase the effectiveness of deer management in urban areas. This year a CWD positive deer was detected in Franklin County. Because of this detection, all but one county in the St. Louis region has been placed into a CWD Management Zone. With the exception of Lincoln County, the use of feed and minerals to attract deer is no longer allowed in the St. Louis Region. The antler point restriction has also been removed, and the number of antlerless permits has increased from 1 to 2 where not already in effect. The cooperation of Missouri's citizens is essential to tackle this new challenge and to keep Missouri's deer herd healthy and thriving.



County Deer Populations & Trends

The Deer Program evaluates a variety of data to assess county-specific deer populations including deer population information, hunter and landowner surveys, and public input. Collectively, this information serves as the foundation for regulation development.

The two main forms of deer population data are harvest data and population indices. Harvest data includes not only the total number of deer harvested per county but also the composition of that harvest (antlered buck, button buck, and doe). Population data includes bowhunter observation indices and population simulations that incorporate harvest numbers, age-at-harvest data, estimated survival, and reproduction rates.

Social data is critical when assessing the deer population in relation to public acceptance levels. In cooperation with the USDA, we send out surveys statewide to 9,000 agricultural producers to assess perceptions and attitudes toward deer populations and regulations. Additionally, we survey 35,000 archery hunters and 35,000 firearm hunters in order to estimate hunter effort, hunter density, and opinions concerning deer populations and regulations. The information depicted within the figures on page 8 are a result of surveys conducted in 2014. We also incorporate public comments received throughout the year via web comments, letters, calls, social media, public meetings (including open houses), emails, and any other feedback.

The Deer Program reviews all this information annually on a county-by-county basis to classify the deer population status and trend (See Figure 12 & 13). Socially acceptable levels (cultural carrying capacity) are the first thing we look at when classifying the status of the deer population. While biological carrying capacity, or the habitat's limitations on the number of deer that can be supported, is included within our assessment generally cultural carrying capacity will be met first. We aim for this goal because agricultural producers, motorists, and other stakeholders will often not tolerate deer population levels at biological carrying capacity. By monitoring the population trends for each county we are able to gain an understanding of where the population is headed and adjust harvest regulations accordingly.

Deer populations are never consistent within a state, region, and even counties due to variation in habitat, harvest regulations, local hunter goals and practices, hunter density, amount of public and private land, and disease outbreaks like hemorrhagic disease. Therefore, these assessments are not applicable to every local situation, but are a general representation of the current status and population trend information for each respective county.

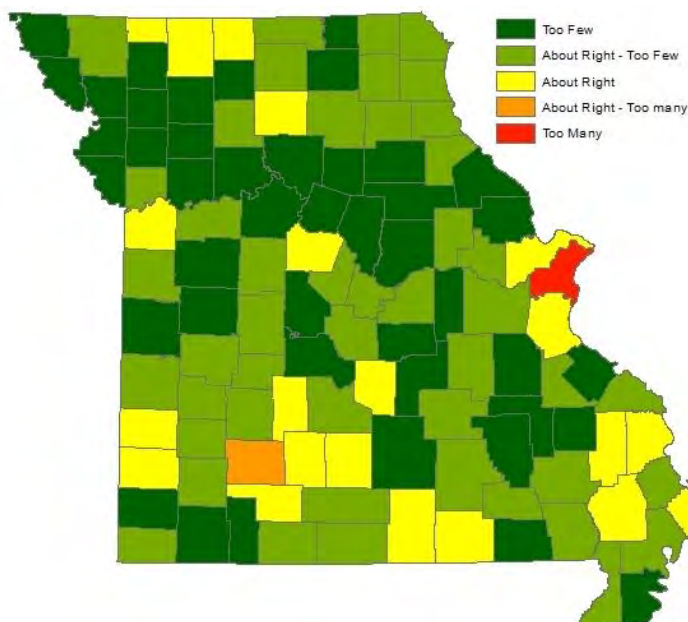


Figure 12. 2015 assessment of county-specific deer population status in relation to biologically and socially acceptable levels.

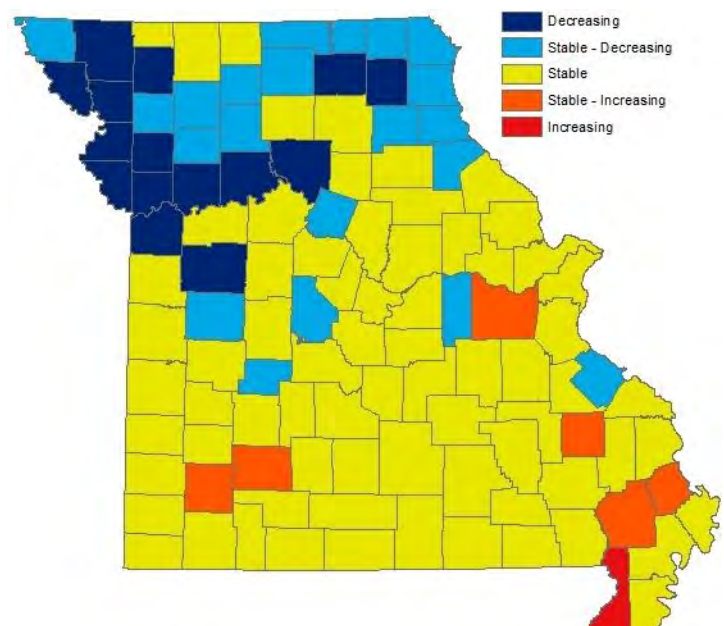


Figure 13. 2015 assessment of county-specific deer population trends.

Table 4: Archery and Firearms Harvest Totals for the 2015-16 Missouri Deer Season.

| County | Archery | | | | Firearms | | | | Totals | | | |
|----------------|---------------|-------------|-----|-------|---------------|-------------|------|-------|---------------|-------------|------|-------|
| | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total |
| Adair | 214 | 48 | 270 | 532 | 1057 | 292 | 1056 | 2405 | 1271 | 340 | 1326 | 2,937 |
| Andrew | 59 | 22 | 79 | 160 | 379 | 134 | 363 | 876 | 438 | 156 | 442 | 1,036 |
| Atchison | 74 | 5 | 73 | 152 | 359 | 50 | 231 | 640 | 433 | 55 | 304 | 792 |
| Audrain | 93 | 34 | 157 | 284 | 611 | 218 | 629 | 1458 | 704 | 252 | 786 | 1,742 |
| Barry | 201 | 36 | 178 | 415 | 915 | 179 | 619 | 1713 | 1116 | 215 | 797 | 2,128 |
| Barton | 136 | 30 | 149 | 315 | 708 | 180 | 697 | 1585 | 844 | 210 | 846 | 1,900 |
| Bates | 107 | 33 | 146 | 286 | 810 | 182 | 647 | 1639 | 917 | 215 | 793 | 1,925 |
| Benton | 305 | 81 | 337 | 723 | 1366 | 465 | 1485 | 3316 | 1673 | 547 | 1822 | 4,042 |
| Bollinger | 243 | 94 | 413 | 750 | 1432 | 344 | 1340 | 3116 | 1676 | 438 | 1753 | 3,867 |
| Boone | 268 | 74 | 325 | 667 | 1094 | 242 | 961 | 2297 | 1364 | 316 | 1288 | 2,968 |
| Buchanan | 26 | 6 | 38 | 70 | 268 | 83 | 259 | 610 | 294 | 89 | 297 | 680 |
| Butler | 234 | 45 | 184 | 463 | 755 | 145 | 611 | 1511 | 992 | 190 | 799 | 1,981 |
| Caldwell | 53 | 24 | 78 | 155 | 468 | 127 | 476 | 1071 | 521 | 151 | 554 | 1,226 |
| Callaway | 344 | 81 | 360 | 785 | 1808 | 415 | 1572 | 3795 | 2166 | 502 | 1957 | 4,625 |
| Camden | 289 | 82 | 391 | 762 | 1247 | 348 | 1337 | 2932 | 1536 | 430 | 1728 | 3,694 |
| Cape Girardeau | 180 | 52 | 294 | 526 | 1098 | 251 | 1048 | 2397 | 1278 | 304 | 1342 | 2,924 |
| Carroll | 85 | 25 | 139 | 249 | 775 | 159 | 596 | 1530 | 860 | 184 | 735 | 1,779 |
| Carter | 219 | 74 | 257 | 550 | 788 | 171 | 574 | 1533 | 1035 | 256 | 891 | 2,182 |
| Cass | 142 | 34 | 183 | 359 | 793 | 184 | 697 | 1674 | 935 | 218 | 880 | 2,033 |
| Cedar | 139 | 42 | 201 | 382 | 827 | 244 | 975 | 2046 | 980 | 290 | 1186 | 2,456 |
| Chariton | 124 | 20 | 101 | 245 | 836 | 113 | 606 | 1555 | 980 | 133 | 707 | 1,820 |
| Christian | 207 | 54 | 218 | 479 | 819 | 184 | 650 | 1653 | 1026 | 238 | 868 | 2,132 |
| Clark | 188 | 54 | 214 | 456 | 714 | 297 | 847 | 1858 | 903 | 351 | 1061 | 2,315 |
| Clay | 103 | 33 | 146 | 282 | 272 | 85 | 237 | 594 | 389 | 133 | 403 | 925 |
| Clinton | 28 | 24 | 62 | 114 | 239 | 82 | 254 | 575 | 270 | 107 | 321 | 698 |
| Cole | 129 | 26 | 116 | 271 | 674 | 169 | 588 | 1431 | 803 | 195 | 704 | 1,702 |
| Cooper | 136 | 38 | 185 | 359 | 934 | 226 | 772 | 1932 | 1070 | 269 | 982 | 2,321 |
| Crawford | 223 | 94 | 311 | 628 | 1489 | 428 | 1400 | 3317 | 1713 | 522 | 1711 | 3,946 |
| Dade | 126 | 24 | 107 | 257 | 774 | 158 | 491 | 1423 | 900 | 182 | 598 | 1,680 |
| Dallas | 253 | 69 | 280 | 602 | 1307 | 330 | 1263 | 2900 | 1560 | 400 | 1543 | 3,503 |
| Daviess | 123 | 23 | 157 | 303 | 829 | 185 | 780 | 1794 | 952 | 208 | 938 | 2,098 |
| Dekalb | 39 | 11 | 54 | 104 | 371 | 106 | 342 | 819 | 412 | 117 | 401 | 930 |

Table 4: Archery and Firearms Harvest Totals for the 2015-16 Missouri Deer Season.

| County | Archery | | | | Firearms | | | | Totals | | | |
|------------|---------------|-------------|-----|-------|---------------|-------------|------|-------|---------------|-------------|------|-------|
| | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total |
| Dent | 159 | 58 | 268 | 485 | 1458 | 467 | 1732 | 3657 | 1617 | 525 | 2000 | 4,142 |
| Douglas | 203 | 51 | 216 | 470 | 1468 | 265 | 1137 | 2870 | 1671 | 316 | 1353 | 3,340 |
| Dunklin | 47 | 5 | 40 | 92 | 218 | 42 | 138 | 398 | 265 | 47 | 178 | 490 |
| Franklin | 309 | 131 | 560 | 1000 | 1715 | 586 | 2058 | 4359 | 2026 | 717 | 2619 | 5,362 |
| Gasconade | 223 | 60 | 239 | 522 | 1111 | 395 | 1325 | 2831 | 1334 | 455 | 1564 | 3,353 |
| Gentry | 91 | 18 | 84 | 193 | 558 | 107 | 482 | 1147 | 650 | 125 | 567 | 1,342 |
| Greene | 352 | 74 | 335 | 761 | 934 | 213 | 891 | 2038 | 1289 | 292 | 1240 | 2,821 |
| Grundy | 98 | 20 | 122 | 240 | 592 | 159 | 488 | 1239 | 690 | 186 | 642 | 1,518 |
| Harrison | 265 | 40 | 240 | 545 | 1254 | 219 | 906 | 2379 | 1520 | 259 | 1146 | 2,925 |
| Henry | 166 | 40 | 219 | 425 | 985 | 289 | 1085 | 2359 | 1151 | 329 | 1304 | 2,784 |
| Hickory | 140 | 52 | 236 | 428 | 907 | 294 | 1076 | 2277 | 1047 | 348 | 1317 | 2,712 |
| Holt | 69 | 9 | 66 | 144 | 361 | 79 | 266 | 706 | 432 | 89 | 334 | 855 |
| Howard | 138 | 29 | 174 | 341 | 770 | 175 | 722 | 1667 | 909 | 204 | 909 | 2,022 |
| Howell | 353 | 68 | 381 | 802 | 1917 | 522 | 2124 | 4563 | 2270 | 590 | 2505 | 5,365 |
| Iron | 91 | 31 | 70 | 192 | 582 | 129 | 416 | 1127 | 673 | 160 | 487 | 1,320 |
| Jackson | 254 | 66 | 346 | 666 | 326 | 84 | 268 | 678 | 612 | 187 | 767 | 1,566 |
| Jasper | 260 | 31 | 227 | 518 | 990 | 168 | 590 | 1748 | 1250 | 199 | 817 | 2,266 |
| Jefferson | 360 | 148 | 641 | 1149 | 1213 | 406 | 1340 | 2959 | 1574 | 554 | 1986 | 4,114 |
| Johnson | 122 | 38 | 192 | 352 | 847 | 223 | 919 | 1989 | 969 | 263 | 1111 | 2,343 |
| Knox | 229 | 46 | 229 | 504 | 868 | 297 | 846 | 2011 | 1098 | 343 | 1075 | 2,516 |
| Laclede | 266 | 77 | 367 | 710 | 1678 | 476 | 1440 | 3594 | 1944 | 553 | 1808 | 4,305 |
| Lafayette | 60 | 18 | 95 | 173 | 412 | 125 | 469 | 1006 | 472 | 144 | 564 | 1,180 |
| Lawrence | 152 | 36 | 153 | 341 | 779 | 133 | 496 | 1408 | 931 | 169 | 649 | 1,749 |
| Lewis | 92 | 40 | 170 | 302 | 590 | 264 | 788 | 1642 | 682 | 304 | 959 | 1,945 |
| Lincoln | 217 | 72 | 304 | 593 | 1069 | 364 | 1215 | 2648 | 1287 | 440 | 1542 | 3,269 |
| Linn | 216 | 51 | 269 | 536 | 1149 | 228 | 1011 | 2388 | 1366 | 285 | 1302 | 2,953 |
| Livingston | 116 | 28 | 122 | 266 | 666 | 136 | 599 | 1401 | 782 | 164 | 722 | 1,668 |
| Macon | 291 | 73 | 318 | 682 | 1551 | 437 | 1463 | 3451 | 1842 | 511 | 1785 | 4,138 |
| Madison | 135 | 41 | 189 | 365 | 809 | 175 | 585 | 1569 | 944 | 216 | 774 | 1,934 |
| Maries | 152 | 44 | 181 | 377 | 741 | 234 | 865 | 1840 | 893 | 278 | 1046 | 2,217 |
| Marion | 115 | 37 | 123 | 275 | 526 | 249 | 679 | 1454 | 641 | 286 | 802 | 1,729 |
| McDonald | 159 | 29 | 140 | 328 | 732 | 108 | 530 | 1370 | 891 | 137 | 670 | 1,698 |

Table 4: Archery and Firearms Harvest Totals for the 2015-16 Missouri Deer Season.

| County | Archery | | | | Firearms | | | | Totals | | | |
|------------------|---------------|-------------|-----|-------|---------------|-------------|------|-------|---------------|-------------|------|-------|
| | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total |
| Mercer | 249 | 50 | 263 | 562 | 796 | 135 | 636 | 1567 | 1045 | 185 | 899 | 2,129 |
| Miller | 189 | 51 | 220 | 460 | 1087 | 335 | 1154 | 2576 | 1276 | 386 | 1374 | 3,036 |
| Mississippi | 32 | 1 | 20 | 53 | 165 | 6 | 65 | 236 | 197 | 7 | 85 | 289 |
| Moniteau | 82 | 24 | 75 | 181 | 621 | 187 | 598 | 1406 | 703 | 211 | 673 | 1,587 |
| Monroe | 174 | 53 | 230 | 457 | 932 | 343 | 1015 | 2290 | 1106 | 396 | 1245 | 2,747 |
| Montgomery | 160 | 48 | 227 | 435 | 953 | 269 | 1021 | 2243 | 1113 | 317 | 1248 | 2,678 |
| Morgan | 256 | 59 | 291 | 606 | 1460 | 388 | 1480 | 3328 | 1717 | 455 | 1780 | 3,952 |
| New Madrid | 32 | 1 | 26 | 59 | 204 | 8 | 62 | 274 | 236 | 9 | 88 | 333 |
| Newton | 263 | 46 | 203 | 512 | 866 | 169 | 641 | 1676 | 1142 | 218 | 852 | 2,212 |
| Nodaway | 137 | 16 | 106 | 259 | 764 | 132 | 537 | 1433 | 901 | 148 | 643 | 1,692 |
| Oregon | 297 | 84 | 345 | 726 | 1516 | 463 | 1804 | 3783 | 1813 | 547 | 2149 | 4,509 |
| Osage | 275 | 77 | 329 | 681 | 1744 | 394 | 1522 | 3660 | 2019 | 471 | 1851 | 4,341 |
| Ozark | 229 | 42 | 200 | 471 | 1356 | 210 | 1039 | 2605 | 1609 | 257 | 1266 | 3,132 |
| Pemiscot | 19 | 1 | 17 | 37 | 97 | 5 | 27 | 129 | 116 | 6 | 44 | 166 |
| Perry | 112 | 37 | 184 | 333 | 1091 | 282 | 1129 | 2502 | 1204 | 319 | 1313 | 2,836 |
| Pettis | 111 | 37 | 166 | 314 | 680 | 191 | 844 | 1715 | 791 | 228 | 1010 | 2,029 |
| Phelps | 179 | 70 | 310 | 559 | 1002 | 319 | 1199 | 2520 | 1181 | 389 | 1510 | 3,080 |
| Pike | 234 | 71 | 335 | 640 | 1196 | 393 | 1404 | 2993 | 1432 | 466 | 1746 | 3,644 |
| Platte | 108 | 41 | 209 | 358 | 322 | 71 | 263 | 656 | 432 | 112 | 473 | 1,017 |
| Polk | 213 | 48 | 238 | 499 | 1251 | 223 | 943 | 2417 | 1466 | 271 | 1182 | 2,919 |
| Pulaski | 203 | 78 | 339 | 620 | 785 | 268 | 888 | 1941 | 988 | 346 | 1227 | 2,561 |
| Putnam | 322 | 34 | 221 | 577 | 1060 | 182 | 771 | 2013 | 1382 | 216 | 992 | 2,590 |
| Ralls | 139 | 37 | 168 | 344 | 657 | 206 | 741 | 1604 | 796 | 243 | 909 | 1,948 |
| Randolph | 144 | 31 | 147 | 322 | 910 | 206 | 754 | 1870 | 1054 | 237 | 901 | 2,192 |
| Ray | 59 | 22 | 98 | 179 | 474 | 148 | 515 | 1137 | 533 | 170 | 613 | 1,316 |
| Reynolds | 156 | 26 | 120 | 302 | 859 | 167 | 599 | 1625 | 1015 | 193 | 719 | 1,927 |
| Ripley | 236 | 74 | 298 | 608 | 1142 | 395 | 1263 | 2800 | 1378 | 469 | 1561 | 3,408 |
| Saint Charles | 265 | 65 | 264 | 594 | 700 | 134 | 563 | 1397 | 1077 | 244 | 974 | 2,295 |
| Saint Clair | 218 | 64 | 300 | 582 | 1199 | 370 | 1460 | 3029 | 1421 | 434 | 1762 | 3,617 |
| Saint Francois | 151 | 63 | 211 | 425 | 869 | 208 | 682 | 1759 | 1022 | 293 | 956 | 2,271 |
| Saint Louis | 371 | 128 | 552 | 1051 | 328 | 67 | 305 | 700 | 753 | 210 | 933 | 1,896 |
| Sainte Genevieve | 135 | 33 | 189 | 357 | 1068 | 257 | 895 | 2220 | 1203 | 290 | 1084 | 2,577 |

Table 4: Archery and Firearms Harvest Totals for the 2015-16 Missouri Deer Season.

| County | Archery | | | | Firearms | | | | Totals | | | |
|--------------------|---------------|-------------|-------|-------|---------------|-------------|-------|--------|---------------|-------------|--------|--------|
| | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total | Antlered Buck | Button Buck | Doe | Total |
| Saline | 97 | 34 | 143 | 274 | 617 | 165 | 642 | 1424 | 714 | 199 | 785 | 1,698 |
| Schuyler | 140 | 34 | 114 | 288 | 552 | 189 | 524 | 1265 | 692 | 223 | 638 | 1,553 |
| Scotland | 249 | 61 | 228 | 538 | 954 | 279 | 917 | 2150 | 1203 | 340 | 1145 | 2,688 |
| Scott | 51 | 11 | 74 | 136 | 300 | 61 | 260 | 621 | 352 | 72 | 334 | 758 |
| Shannon | 183 | 47 | 202 | 432 | 1084 | 261 | 1116 | 2461 | 1272 | 309 | 1322 | 2,903 |
| Shelby | 208 | 47 | 180 | 435 | 914 | 248 | 840 | 2002 | 1123 | 295 | 1020 | 2,438 |
| Stoddard | 205 | 81 | 301 | 587 | 701 | 175 | 586 | 1462 | 920 | 257 | 904 | 2,081 |
| Stone | 163 | 58 | 153 | 374 | 624 | 151 | 477 | 1252 | 787 | 209 | 630 | 1,626 |
| Sullivan | 230 | 30 | 199 | 459 | 1034 | 189 | 850 | 2073 | 1264 | 220 | 1052 | 2,536 |
| Taney | 207 | 51 | 222 | 480 | 951 | 140 | 702 | 1793 | 1160 | 192 | 924 | 2,276 |
| Texas | 294 | 104 | 333 | 731 | 2296 | 561 | 2129 | 4986 | 2591 | 665 | 2463 | 5,719 |
| Vernon | 188 | 48 | 264 | 500 | 971 | 271 | 904 | 2146 | 1161 | 319 | 1168 | 2,648 |
| Warren | 168 | 54 | 213 | 435 | 849 | 253 | 901 | 2003 | 1017 | 307 | 1114 | 2,438 |
| Washington | 171 | 46 | 204 | 421 | 1082 | 313 | 901 | 2296 | 1254 | 359 | 1105 | 2,718 |
| Wayne | 355 | 112 | 392 | 859 | 1410 | 392 | 1207 | 3009 | 1793 | 511 | 1613 | 3,917 |
| Webster | 217 | 66 | 248 | 531 | 1226 | 216 | 955 | 2397 | 1443 | 282 | 1203 | 2,928 |
| Worth | 118 | 14 | 84 | 216 | 412 | 68 | 294 | 774 | 531 | 84 | 381 | 996 |
| Wright | 185 | 56 | 197 | 438 | 1138 | 258 | 838 | 2234 | 1323 | 314 | 1035 | 2,672 |
| Regions | | | | | | | | | | | | |
| Central | 2831 | 761 | 3413 | 7005 | 15472 | 4160 | 15188 | 34820 | 18321 | 4940 | 18675 | 41936 |
| Kansas City | 1884 | 533 | 2603 | 5020 | 8983 | 2540 | 9278 | 20801 | 10923 | 3129 | 12057 | 26109 |
| Northeast | 2969 | 696 | 3146 | 6811 | 13515 | 4071 | 13495 | 31081 | 16489 | 4771 | 16656 | 37916 |
| Northwest | 2029 | 428 | 2235 | 4692 | 11550 | 2450 | 9641 | 23641 | 13610 | 2895 | 11948 | 28453 |
| Ozark | 2740 | 806 | 3346 | 6892 | 15950 | 4160 | 15843 | 35953 | 18748 | 4983 | 19282 | 43013 |
| Southeast | 2178 | 634 | 2724 | 5536 | 11658 | 2647 | 9650 | 23955 | 13886 | 3312 | 12473 | 29671 |
| Southwest | 3454 | 823 | 3655 | 7932 | 16288 | 3566 | 13436 | 33290 | 19776 | 4405 | 17130 | 41311 |
| St. Louis | 2084 | 738 | 3049 | 5871 | 8445 | 2551 | 8683 | 19679 | 10701 | 3353 | 11984 | 26038 |
| Grand Total | | | | | | | | | | | | |
| Grand Total | 20169 | 5419 | 24171 | 49759 | 101861 | 26145 | 95214 | 223220 | 122454 | 31788 | 120205 | 274447 |

Adjusting Management to Changing Deer & Hunter Populations

Managing Missouri's deer population is more complex than in the past. Prior to the 1980s, deer management in Missouri focused on promoting growth of deer populations, which was accomplished through limited harvest quotas. By the late 1980s, deer populations in northern and central Missouri were growing rapidly, and management shifted to liberalize hunting quotas and increase hunting opportunities. These changes were successful in stabilizing or reducing deer populations in targeted areas. Our focus has now shifted to establishing and achieving localized population goals, a complicated balancing act among deer populations which are more variable than in the past and a hunter population with changing values and participation rates.

Antlerless Permit Allocation and Season Change

Antlerless harvest is an important tool to promote or reduce population growth. Historically liberalized antlerless harvest in Northern Missouri achieved the goal of reducing population growth in this region. Current population goals throughout much of the state are to increase or stabilize deer populations. Thus, the liberal antlerless harvest quotas throughout much of the state were no longer appropriate, and in 2014, we reduced antlerless permit availability to 1 or 2 during the firearms portion throughout much of the state. In addition, the length of the antlerless portion of the firearms season (12-days) is no longer consistent with management goals. Therefore, beginning in 2016-2017, we have reduced the length of the antlerless portion of the firearms season to three days in early December following the firearms portion. We expect these changes to have gradual impacts over the next few years but could see localized impacts much sooner. However, it is important to view deer management not with annual goals, but instead long term goals, because dramatic shifts in harvest result in more frequent and complicated regulation changes.

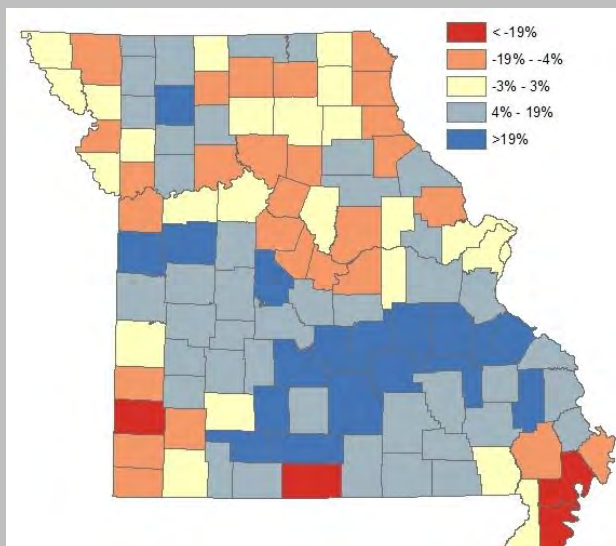
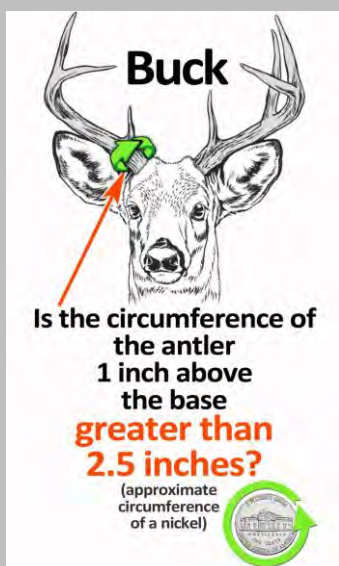


Figure 15. Percent change in 2015 doe harvest compared to 2014.



Changes to Telecheck and the MOhunting app

Beginning in 2016, hunters will be asked new questions when they check a deer. In order to assess the effect of crossbows on archery deer harvest, we will ask all archery hunters if they used a crossbow to harvest their deer. In addition, with the exception of hunters that harvest button bucks, we will ask all hunters the following:

If checking a doe: Is the distance from the edge of the eyeball to the edge of the nostril greater than 4.5 inches?

If checking an antlered buck: Is the circumference of the antler 1 inch above the base greater than 2.5 inches?

The purpose of these measurements is to determine the age class of the deer that was harvested. The questions about does will help us assess if the harvested doe was a fawn or older age class, and the question about bucks will help us assess if the buck was a yearling or older age class. This information is essential to our population models and helps us better manage the deer population. You can be prepared by having a ruler or other measurement tool handy in the field.

Recruitment and Retention of Missouri Deer Hunters

Hunters are essential components of deer management in Missouri. Hunter retention and recruitment is important not only to keep deer populations within socially and biologically acceptable levels, but because hunters are among our most engaged advocates for the conservation of Missouri's forests, fish and wildlife. This is why it is important for the Department to monitor the age distribution and participation rate of our deer hunters. In general, younger hunters typically harvest more deer than their elders. About a third of our hunter population belongs to the "baby boomer" generation, and as they age, we can expect that participation will decline. Our goal is to retain and recruit more hunters to replace aging hunters. Hunter recruitment is dependent on the older generation to teach and share their passion for the outdoors with the youth and novice hunters of our state. This mentoring and bonding is key in retaining future hunters and keeping tradition alive.

In order to promote hunter recruitment and retention we have instituted several regulation changes effective during the 2016-2017 season. This year the late youth season will occur November 25 – 27, 2016. Last year there was an 82% decrease in the late youth season compared to early youth season. Previous years have followed this trend typically resulting in a low harvest during late youth portion. This time period should result in more favorable weather conditions for hunting, and increases the season length from 2 days to 3 days. The intention of this change is to increase young hunter participation and provide a better opportunity for them to enjoy the outdoors. The second change we made was the allowance of crossbows during the archery season. The intention of this regulation change is to retain older hunters longer. It appears that after hunters reach their 40's archery participation declines, and we suspect this is due to the physical demands of archery hunting. We do expect to see some firearms hunters shift harvest to the archery season as a result of this regulation change, and will closely monitor the effect of the change on archery and overall deer harvest through telecheck reports.



Deer hunting is important to continue the long tradition of hunting and conservation in Missouri

Age Distribution of Missouri Deer Hunters in 2004 & 2013

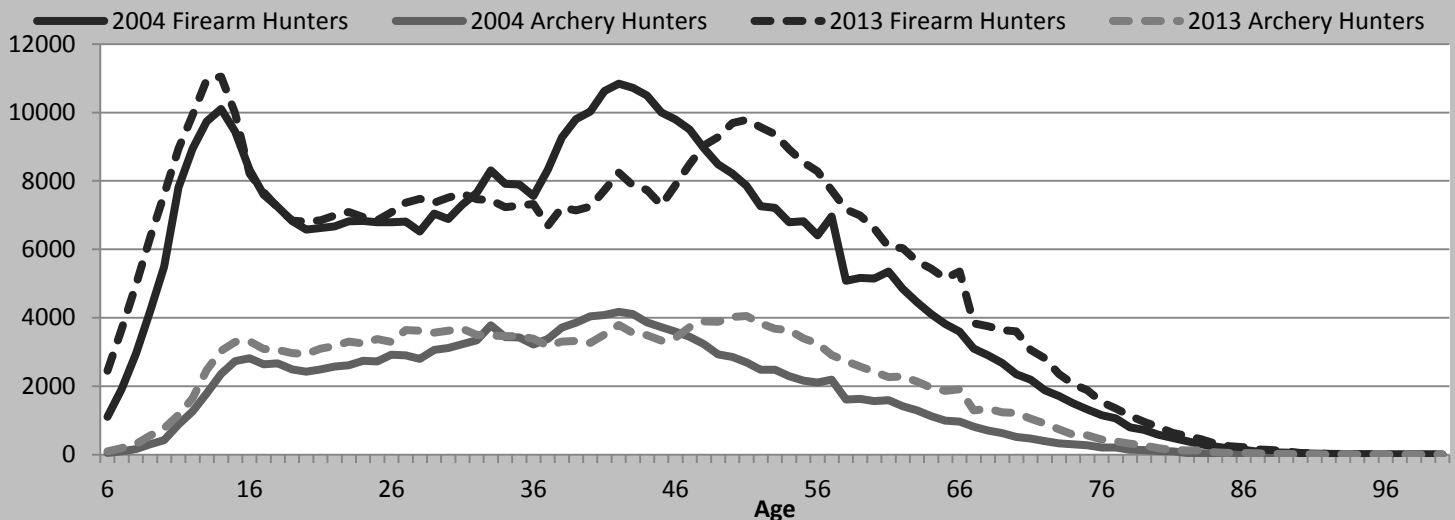


Figure 16. Age distribution of archery and firearm hunters in Missouri during 2004 & 2013 deer seasons.

Deer Management Information

Managing your Land for Deer

Landowners can implement habitat management practices that increase the quality and quantity of cover and forage. These practices will not only benefit deer but will profit other species such as turkeys and upland game as well. Missouri Department of Conservation staff, including private land conservationists, work with landowners to develop management plans according to the landowners' goals. MDC staff can guide and teach management techniques such as timber stand improvement, food plot development and invasive species control.



A cooperative workshop in southeast Missouri where landowners and families gather to learn about wildlife and habitat management.

Deer Cooperatives

Cooperatives, or coops, are not a new concept, as it is simply a group of landowners or hunters working together to improve the wildlife and habitat. In Missouri, coops focusing on deer management are becoming increasingly popular.

Deer can have home ranges over 1,000 acres, therefore, most local deer populations are influenced by several landowners and hunters. By working together, there is a greater chance of achieving shared deer management goals.



For information regarding Deer Cooperatives or Land Management go online to mdc.mo.gov or call 573-815-7900 and ask for the Private Lands Deer Biologist.

Deer Information for Hunters & Landowners

The University of Missouri (MU) Extension and Missouri Department of Conservation have developed a publication series devoted solely to deer management. This information is intended for landowners, hunters, and wildlife enthusiasts that want to learn more about deer and managing deer in Missouri.

There are seventeen science-based deer handouts that will guide landowners and hunters to better understanding and managing deer populations. Several publications explain how to obtain population information, such as sex ratio, density, fawn recruitment, and age structure. Topics also include habitat management and deer biology, including antler growth, ecology, and aging deer by jawbones.



These publications are free and available on MU Extension's website at <http://extension.missouri.edu/deer>. For information on how MDC works with landowners to improve habitat, or to find a private lands conservationist near you, go online to <http://mdc.mo.gov/property>

Chronic Wasting Disease

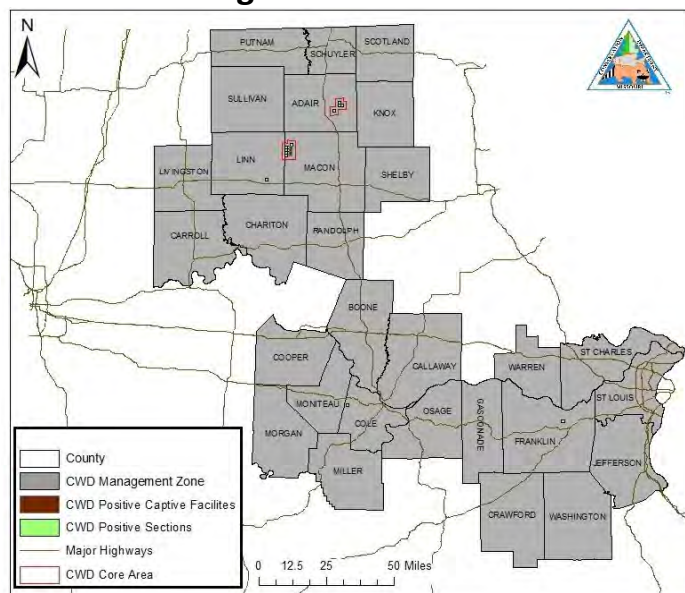


Figure 17. This map illustrates the distribution of detected CWD-positive deer, CWD Management Zones, and Core Areas as of June 2016.

Chronic wasting disease (CWD) belongs to a group of diseases known as transmissible spongiform encephalopathies (TSEs) which cause deterioration of the brain in cervids such as deer, elk, and moose. CWD is always fatal, but can take months or years before symptoms appear. These symptoms can include changes in behavior, extreme weight loss, excessive salivation, stumbling, and tremors. Infected cervids can spread CWD by contacting other cervids and via excrements (e.g., feces, urine, and saliva) in the environment. Additionally, CWD can spread geographically through the natural movements of infected cervids and the human-assisted movement of infected carcasses (e.g., hunter-harvested deer) or captive cervids. To determine if a cervid is CWD-positive, a laboratory test of the brain stem or lymph node tissue is required.

Current research indicates that CWD cannot spread to domestic livestock, such as sheep or cattle. The Center for Disease Control and Prevention (CDC) has found no evidence that CWD can infect people. While there is no scientific evidence that CWD is transmissible to humans or animals

other than deer and cervids, public health officials do not recommend the consumption of the parts (i.e., brain, spinal cord, eyes, spleen, and lymph nodes) where prions are known to accumulate.

CWD in Missouri: 2016 Update

CWD was first detected in Missouri in 2010 at a captive big-game hunting preserve in Linn County. In January 2012, the first free-ranging CWD-positive deer was detected in Macon County. As of July 2016, CWD has been detected in 33 free-ranging deer in Macon (21), Adair (9), Cole (1), Franklin (1) and Linn (1) counties, and 11 captive deer in Linn (1) and Macon (10) counties. When a CWD-positive deer is detected in Missouri, all counties which fall within an approximately 25-mile radius around the location of the deer are classified into “CWD Management Zone”. MDC implements several management actions within the CWD Management Zone to limit the spread and prevalence of the disease, including: 1) the number of antlerless permits available to hunters during the firearms seasons increases to 2 where not already in effect.; 2) the placement of feed, minerals, and other consumable deer attractants that unnaturally congregate animals is banned; and 3) the antler point restriction is removed if in effect. The antler point restriction is removed because it protects young bucks, which is the segment of the population most likely to disperse to new areas and thus spread disease across the landscape. Furthermore, in addition to routine statewide sampling that began in 2002, MDC increases efforts to sample hunter-harvested deer in the Management Zone and implements targeted culling in the Core Areas (see red outlined areas in the map above) to decrease the spread and prevalence. Post-season targeted culling still proves to be more effective at removing CWD-positive deer from the landscape; 58% of the CWD-positive deer detected in Missouri came from post season harvest. Additionally, the Department will require hunters to present their deer, or the head with at least six inches of the neck intact, for CWD testing at an MDC sampling location on the day of harvest if they harvest it in one of the 29 CWD Management Zone counties during the opening weekend of the fall firearms deer season, Nov. 12 and 13.

CWD in Arkansas

In February 2016, Arkansas detected its first CWD-positive cervid: an elk harvested during the 2015-2016 hunting season. As of July 2016, Arkansas has detected 95 CWD-positive cervids in the state (5 elk, 90 white-tailed deer). Most of the CWD positive cervids have been in northern Arkansas (Boone, Carroll, Newton, Madison, and Pope counties). Given the relatively high prevalence of CWD in Arkansas and close proximity to the Missouri border, we plan to increase surveillance efforts in the Arkansas border area during 2016-2017.

For more information, contact the Wildlife Health Specialist at (573) 815-7900.

Deer Program Research Projects

Research projects produce important information that is incorporated into management decisions on scales ranging from local to statewide levels, and are consequently essential to the Deer Program's ability to manage for a sustainable, healthy deer herd at desired population levels for all stakeholders. The following research projects will have broad and diverse application to deer management in Missouri.

Deer Movement Study in Southeast Missouri



A new research project beginning in summer 2016 is aimed at gaining a greater understanding of deer movement ecology related to small cropfields in Southeast Missouri. Browsing by deer can cause damage to soybean fields during the spring and summer, especially if these fields are small and surrounded by forested terrain. Damage permits are sometimes issued to farmers to reduce the local deer densities during the spring and summer, but this method has generally been unsuccessful at reducing damage problems and is unpopular with local hunters. The best option is to work with farmers reporting damage to reduce local deer densities during the fall deer seasons – but it

seems deer are no longer present on the properties after the soybean fields are harvested. Are these deer making seasonal migratory movements? Or are they using refugia near the soybean fields during the fall and winter? To answer these questions, MDC staff will be capturing deer during the summer that are using cropfields and fitting them with GPS collars. These collars will allow staff to track movements of deer throughout the year. The results of this project will be used to target efforts to reduce localized deer densities at the appropriate scale surrounding damage areas during the fall hunting seasons, and will have application to similar landscapes throughout Missouri.

Modeling Chronic Wasting Disease Dynamics and Impacts on White-tailed Deer in Missouri

In collaboration with the University of Missouri, MDC has implemented a research project to model chronic wasting disease (CWD) distribution and potential impacts on Missouri's deer population. We plan to model the distribution and prevalence of CWD currently and in the future given various scenarios. This will allow us to model potential impacts of CWD on the deer herd, including survival and abundance. Additionally this information may provide insight on management adjustments that could limit CWD distribution and prevalence.



CWD is a fatal neurological disease that poses a serious long-term threat to the health of the free-ranging deer population.

In addition to the application to the CWD Management Zones it will allow MDC to evaluate the impact of various management practices on CWD prevalence and distribution. Also, the study will provide the ability to compare various monitoring strategies, thus increase our ability to detect CWD early so that management efforts can be effective, while ensuring the efficient use of resources.

Refer to page 22 for more information on CWD.

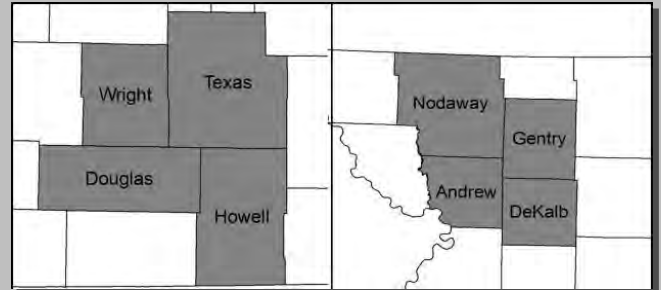


Survival, Recruitment, and Movement Patterns of White-tailed Deer in Missouri

The Missouri Department of Conservation and the University of Missouri have initiated a 5-year study to evaluate deer survival, reproduction, and movement patterns within two contrasting habitats. The findings will influence deer management in Missouri for years to come and will be applied to deer population models, disease management protocols, and localized deer management efforts.

During the past several decades, large-scale changes have occurred and the resulting impacts on survival, reproduction, and movements are unknown. These changes include shifts in habitat conditions, hunter goals, deer densities, predator populations, and harvest vulnerability. If historic estimates do not reflect current conditions, then the accuracy of the Department's population models and effectiveness of management efforts could be influenced.

There are study locations in both the Ozarks and Northwest portions of Missouri that represent contrasting compositions of public land, habitat (ex: forest, agriculture, pasture), and harvest regulations, which can impact deer survival and movement.



Trapping efforts began in January 2015 to capture, collar, and monitor deer of all age and sex classes within both study areas. The sample of collared deer will be replenished annually due to losses as a result of natural mortalities, hunter harvest, and deer maturing into older age classes. Adult deer are captured and collared from January - March by using traps and nets. Pregnant females will be given a transmitter that will alert researchers when births occur, allowing us to locate, capture, and collar fawns.



An adult doe looks out of a clover trap after being captured.

Hunters are encouraged to NOT let the presence of a collar impact your decision to harvest a deer. It is critical for research purposes that collars do not bias hunter harvest decisions. Therefore, if you would normally harvest a deer that happens to be collared, do so and please contact the number listed on the tag/collar as soon as possible. Likewise, if you would normally not harvest that deer, then do not let the presence of a collar impact your decision.

Local landowners and hunters are vital to implementing this project, as the majority of the research activities are conducted on private property. Landowners have been generous in allowing research crews to gain access to trap adult deer, locate fawns, and investigate mortalities. For questions or interest in participating, contact the Deer

Program at 573-815-7900, and ask for the deer biologist. This project is being funded by hunters and sportsmen and women through financial assistance provided by Wildlife Restoration Funds.





A Deer crew takes measurements and collars a deer as part of 5-year survival, movement, and recruitment study in the Northwest and Ozark regions



Missouri Department of Conservation